

ABSTRACT OF THE DISCLOSURE

A method for manufacturing a semiconductor device includes providing a first layer, forming a plurality of isolation regions in the first layer, forming an insulating layer over the first layer, forming a second layer over the insulating layer, implanting one of helium, neon, krypton or xenon ions into the second layer, implanting boron ions into the second layer, patterning and etching the implanted second layer and the insulating layer, annealing at least the layer of implanted second layer to activate the implanted boron ions, and forming source and drain regions in the first layer.